EMERGENCY CASEBOOK

Case of the month: Lesson of the week: don't forget scombroid

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We describe five cases of scombroid that presented as one incident. We discuss the aetiology, clinical features, differential diagnosis and treatment of this condition.

Over a 10-min period, five patients were brought by ambulance to an accident and emergency department. All the patients had been to a conference at a hotel and had taken ill within a short time of eating a buffet meal that contained fresh tuna. All patients had a normal temperature and a normal blood pressure. Three of them had a tachycardia (heart rate >100 bpm). Table 1 shows their symptoms and signs

A clinical diagnosis of scombroid was made; all five patients were treated with intravenous cimetidine and chlorphenamine, and they showed a rapid improvement. The patients were also given a variety of analgesics for headache. All the patients were later discharged from the emergency department.

It was known that there were about 150 people at the conference who had eaten the same meal; hence the public health department was informed and arrangements were made to treat other patients and also to institute the major incident plan if required. However, no more patients attended the department.

Subsequent analysis of the tuna showed high concentrations of histamine in the flesh (>35 mg/100 g flesh). This level is in keeping with a diagnosis of scombroid poisoning.

DISCUSSION

Scombroid occurs as a result of eating fish that are normally good food species. Most cases arise from ingestion of scombroid species, which are dark fleshed, oily fish such as tuna and mackerel. Other species such as trout have been implicated.[1 2] The flesh of these fish is rich in histidine. If, during processing, the flesh is contaminated by bile or gut bacteria, the histidine is decarboxylated to histamine.[1–3] Ingestion of this (and other related toxins) causes scombroid. Levels of toxins are not affected by subsequent cooking.[1 4 5]

Random sampling of the causative fish is undertaken in the UK by the Food Standards Agency. There is no statutory acceptable level in the UK, and considerable disagreement persists as to the exact toxic level. However, it is accepted that concentrations >10–20 mg/100 g are likely to be toxic, while concentrations below this do not wholly rule out toxicity because of other possible toxins. The US Food and Drug Administration has set the acceptable concentration at 5 mg/100 g.[4 6] If a restaurant is supplied with a box of fish, it is possible for just one fish to be contaminated. It is also possible for one part of the fish to be contaminated, whereas another part is relatively uncontaminated. This probably explains why only five patients developed the symptoms.

Symptoms start rapidly after ingestion of contaminated fish, often within 5 min, and are maximal at about 2 h after ingestion. Typical symptoms are as described in our patients. Less commonly, urticaria, bronchospasm and hypotension may occur. The disease is self-limiting and usually subsides within 24 h. Mild cases require no treatment, but more severe cases can be treated with H1 and H2 anti-histamine drugs.[2 5 7] The diagnosis is a clinical one, although it may be confirmed by measuring the histamine levels in the fish.[2 6 8]

Acute illness affecting several people simultaneously is usually a toxic effect. Bacterial toxins causing food poisoning is the most likely cause, although gaseous toxins (eg, carbon monoxide) should be considered. Another possibility is mass hysteria, although the clinical features in this case did not suggest that. If only a single person is affected, scombroid needs to be differentiated from allergic reaction to the fish.[1 2 5 9]

It is believed that many cases of scombroid are missed because the doctor is unaware of the existence of this disease[2 9] and, in this hospital, many of the emergency physicians and general physicians were not aware of it. There is clearly a potential for scombroid to cause a major incident with a large number of casualties.

Table 1 Symptoms and signs of patients attending the accident and emergency medicine department

Sex	Age	Symptoms	Signs
M	52	Acute-onset throbbing headache, felt hot and dizzy; abdominal pain; diarrhoea	Nil
M	36	Severe headache; vomiting	Heart rate 101 bpm
M	51	Palpitations; felt hot, dizzy and shaky	Sinus tachycardia (heart rate 120 bpm); injected conjunctivae; erythematous rash on trunk, arms and face
F	25	Headache; palpitations; mild lower abdominal pain	Mild facial rash
M	29	Headache; flu-like symptoms; diarrhoea	Heart rate 104 bpm; facial rash

bmp, beats per minute; F, female; M, male.

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IMAGES IN EMERGENCY MEDICINE

Sister Mary Joseph's nodule

A 23 year old man visited the emergency department because of the abdominal fullness that had been bothering him for several months. The associated symptoms included intermittent tenesmus, frequent defecation, and anorexia. During physical examinations, a bluish and firm nodule was palpable over the umbilicus (fig 1).

Computed tomography scan of the abdomen showed intra-abdominal carcinomatosis with an umbilical metastatic nodule (fig 2). Fine needle aspiration of the nodule revealed desmoplastic small round cell tumour.

''Sister Mary Joseph's nodule'' was named in recognition of Sister Mary Joseph—a first assistant to Dr William Mayo in the early days of Mayo Clinic.[1] The most common origin of the metastatic nodule was gastrointestinal cancer, followed by gynaecologic cancer and thoracic cavity. Since the prognosis is extremely poor, with a mean survival of only a few months, surgery is usually not indicated. Meticulous physical examination is required in order to avoid any misdiagnosis.

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Figure 1 Photo of nodule

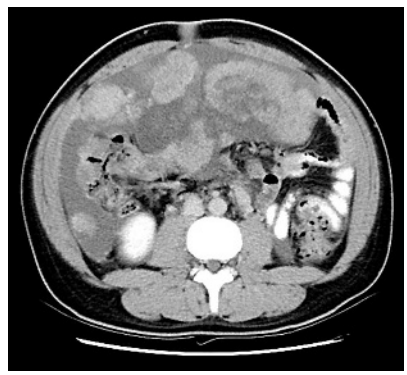

Figure 2 Computed tomography scan of the abdomen